

**AMENDMENT**

**IN THE CLAIMS**

Please amend the claims as indicated in Appendix A submitted herewith according to the proposed revision to 37 C.F.R. § 1.121 concerning a manner for making claim amendments.

**REMARKS**

Claims 1-4 are presently pending in the captioned application with claims 1 and 2 amended.

Claim 1 has been amended to change the range of catalyst activity from "44,000 g-polymer/g-catalyst or above" to "44,800 to 52,800 g-polymer/g-catalyst". Support for the amended range can be found in Examples 1-5 of Table 3 of the specification.

Claim 2 has been amended to change the range of catalyst activity from "44,000 g-polymer/g-catalyst or above" to "52,900 to 54,600 g-polymer/g-catalyst". Claim 2 has been further amended to recite a particle size of less than 100  $\mu$ m of 0.6% by weight or below instead of 1.5% or below. Support for the amended range and weight range can be found in Examples 6 and 7 of Table 5 of the specification.

No new matter within the meaning of § 132 has been added by

any of the amendments.

Accordingly, Applicants respectfully request the Examiner to reconsider and allow all claims pending in this application.

**1. Rejection of Claims 1-4**  
**under 35 U.S.C. § 112, 1<sup>st</sup> paragraph**

The Office Action rejects claims 1-4 under 35 U.S.C. § 112, 1<sup>st</sup> paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The Office Action states:

The newly added catalyst activity limitation at the end of Claims 1 and 2 respectively "having a catalytic activity of 44,000 g-polymer/g-catalyst or above ... and partial pressures of ethylene of 4.0 kg/cm<sup>2</sup>-G", are new matter. Applicants have indicated support for the newly added limitation can be found in the Specification at page 32 on lines 16-25. However, the full support for the new activity limitation is not identified in the indicated page 32, lines 16-25.

Applicants respectfully traverse the rejection over the presently pending claims. In particular, the phrase "having a

catalytic activity of 44,000 g-polymer/g-catalyst or above . . . and partial pressures of ethylene of 4.0 kg/cm<sup>2</sup>-G" of claims 1 and 2 have been amended to recite ranges that are fully supported by the specification.

Turning to the rule, 35 U.S.C. § 112, 1<sup>st</sup> paragraph states that the "specification shall contain a written description of the invention . . .". To satisfy the requirement, the specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention. Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1550, 1563, 19 USPQ2d 1111, 1116 (Fed. Cir. 1991). Moreover, a description as filed is presumed to be adequate, unless the examiner presents sufficient evidence or reasoning to rebut the presumption. See e.g., In re Marzocchi, 439 F.2d 220, 224, 169 USPQ 367, 370 (CCPA 1971).

In the present application, the disputed portion of presently pending claims 1 and 2 have been amended to recite a range from "44,800 to 52,800 g-polymer/g-catalyst" and "52,900 to 54,600 g-polymer/g-catalyst", respectively.

In particular, the catalyst activity limitation of claim 1 now recites a catalytic activity of 44,800 to 52,800 g-polymer/g-catalyst and a ratio of powdery polymer having a particle size of less than 100  $\mu$ m of 1.5% by weight or below when used to polymerize

ethylene for 2 hours at a temperature of 80°C and a partial pressure of ethylene of 4.0 kg/cm<sup>2</sup>-G.

As can clearly be seen by Table 3 on page 41 of the specification, the claimed range of claim 1 from 44,800 to 52,800 g-polymer/g-catalyst is supported beginning with the Example 4, which recites a catalytic activity of 44,800 g-polymer/g-catalyst to Example 5, which recites a catalytic activity of 52,800 g-polymer/g-catalyst. Clearly, the specification describes in sufficient detail a range from 44,800 to 52,800 g-polymer/g-catalyst where one of ordinary skill in the art could reasonably conclude that Applicants had possession of the claimed invention.

Regarding the presently claimed particle size, the continuation of Table 3 on page 42 shows a particle size of less than 100 µm of 1.5% by weight or below for Examples 1-5 as presently claimed in claim 1. As stated in the previous Response filed on March 4, 2003, the specification at page 32, lines 16-25 describe the polymerization conditions.

Similarly, claim 2 now recites a catalytic activity of 52,900 to 54,600 g-polymer/g-catalyst and a ratio of powdery polymer having a particle size of less than 100 µm of 0.6% by weight or below when used to polymerize ethylene for 2 hours at a temperature of 80°C and a partial pressure of ethylene of 4.0 kg/cm<sup>2</sup>-G.

As can clearly be seen by Table 5 on page 45 of the

specification, the range of 52,900 to 54,600 g-polymer/g-catalyst is supported by Example 6, which recites a catalytic activity of 52,900 g-polymer/g-catalyst and by Example 7, which recites a catalytic activity of 54,600 g-polymer/g-catalyst. From the examples, one of ordinary skill in the art could clearly conclude that Applicants had possession of the range from 52,900 to 54,600 g-polymer/g-catalyst.

Regarding the presently claimed particle size, Applicants note that the continuation of Table 5 on page 45 shows a particle size of less than 100  $\mu\text{m}$  of 0.6% by weight or below for Examples 6 and 7 as presently claimed in claim 2. As stated in the previous Response filed on March 4, 2003, Applicants again note that the specification at page 32, lines 16-25 describes the polymerization conditions.

For all these reasons, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 1-4.

#### **CONCLUSION**

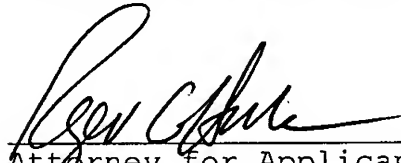
In light of the foregoing, Applicants submit that the application is now in condition for allowance. The Examiner is therefore respectfully requested to reconsider and withdraw the rejection of the pending claims and allow the pending claims.

Favorable action with an early allowance of the claims pending is earnestly solicited.

Respectfully submitted,

**SHERMAN AND SHALLOWAY**

**SHERMAN AND SHALLOWAY**  
413 N. Washington Street  
Alexandria, Virginia 22314  
703-549-2282

  
Attorney for Applicants  
Roger C. Hahn  
Reg. No. 46,376



Attorney Docket No. ZU-319/CONT  
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: ) Group Art Unit: 1713  
YASHIKI; MINAMI )  
Serial No. 10/025,548 )  
Filed: December 26, 2001 )

Examiner: Lu, C Caixia

RECEIVED  
JUL 23 2003  
GROUP 1700

For: **SOLID TITANIUM CATALYST COMPONENT, ETHYLENE  
POLYMERIZATION CATALYST CONTAINING THE SAME, AND  
ETHYLENE POLYMERIZATION PROCESS**

APPENDIX A

Please amend the following claims according to the proposed revision of 37 C.F.R. § 1.121 concerning a manner for making claim amendments.

1. (Currently Amended) A solid titanium catalyst component being obtained by a process comprising:

B1 a step of bringing (a) a liquid magnesium compound into contact with (b) a liquid titanium compound in the presence of (c) an organosilicon compound having no active hydrogen in an amount of 0.25 to 0.35 mol based on 1 mol of the magnesium compound (a); and

a step of elevating the temperature of the resulting contact product (i) to a temperature of 105 to 115°C and

maintaining the contact product (i) at this temperature,

BI  
Contd  
said solid titanium catalyst component comprising magnesium, titanium, halogen and the organosilicon compound having no active hydrogen (c), and having a catalytic activity of ~~44,000~~ 44,800 to 52,800 g-polymer/g-catalyst ~~or above~~ and a ratio of powdery polymer having a particle size of less than 100  $\mu\text{m}$  of 1.5% by weight or below when used to polymerize ethylene for 2 hours at a temperature of 80°C and a partial pressure of ethylene of 4.0 kg/cm<sup>2</sup>-G.

2. (Currently Amended) A solid titanium catalyst component being obtained by a process comprising:

a step of bridging (a) a liquid magnesium compound into contact with (b) a liquid titanium compound in the presence of (c) an organosilicon compound having no active hydrogen in an amount of 0.25 to 0.35 mol based on 1 mol of the magnesium compound (a); and

a step of elevating the temperature of the resulting contact product (i) to maintain the contact product (i) at a given temperature (T1) of 105 to 115°C, to which additional organosilicon compound having no active hydrogen (c) is added in an amount of not more than 0.5 mol based on 1 mol of the



magnesium compound (a) during the elevation of the temperature from T1 - 10°C to T1, or after the completion of the temperature elevation, so as to bring the compound (c) into contact with the contact product (i),

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said solid titanium catalyst component comprising magnesium, titanium, halogen and the organosilicon compound having no active hydrogen (c), and having a catalytic activity of ~~44,000~~ 52,900 to 54,600 g-polymer/g-catalyst ~~or above~~ and a ratio of powdery polymer having a particle size of less than 100  $\mu$ m of ~~1.5%~~ 0.6% by weight or below when used to polymerize ethylene for 2 hours at a temperature of 80°C and a partial pressure of ethylene of 4.0 kg/cm<sup>2</sup>-G.

3. (Original) An ethylene polymerization catalyst comprising:

[I] the solid titanium catalyst component as claimed in any one of claims 1 and 2, and

[II] an organometallic compound.

4. (Original) An ethylene polymerization process comprising polymerizing ethylene or copolymerizing ethylene and

B/C  
CmH  
a comonomer in the presence of the catalyst as claimed in claim

3.

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